

Fig. 1A (Prior Art)

Example message generated by User A1's local mail program

140 { Date: Mon, 27 Nov 00 10:18:52 ~ 141
From: "Alan Smith" <a1@abc.com> ~ 142
To: x1@xyz.com, a2 ~ 143
Subject: Test Message ~ 144
150 { This message is a test. The end.

Figure 1B (Prior Art)

Example message as modified by local computing device 100 Sendmail program

From a1@abc.com Mon Nov 27 10:19:23 2000 ~ 145
Message-Id: <9631121611.AA02124@abc.com> ~ 146
Date: Mon, 27 Nov 00 10:18:52
From: "Alan Smith" <a1@abc.com>
To: x1@xyz.com, a2
Subject: Test Message

This message is a test. The end.

Figure 1C (Prior Art)

Example message as modified by remote computing device 130 Sendmail program

147 ~ { From a1@abc.com Mon Nov 27 10:19:23 2000
Received: from abc.com [216.122.95.01] by xyz.com (8.8.4/8.8.4) with ESMTP id BF02C24;
Mon, 27 Nov 2000 10:21:46
Message-Id: <9631121611.AA02124@abc.com>
Date: Mon, 27 Nov 00 10:18:52
From: "Alan Smith" <a1@abc.com>
To: x1@xyz.com, a2
Subject: Test Message

This message is a test. The end.

Figure 1D (Prior Art)

Example SMTP exchange as computing device 100 Sendmail connects to computing device 130 Sendmail

220-xyz.com Sendmail 8.6.12/8.5 ready at Mon, 27 Nov 2000
10:22:23 -0800
220 ESMTP spoken here
220 ~ >>> EHLO abc.com
250-xyz.com Hello abc.com, pleased to meet you
250-EXPN
250-SIZE
250 HELP
>>> MAIL From:<a1@abc.com>
250 <a1@abc.com>... Sender ok
>>> RCPT To:<x1@xyz.com>
250 <x1@xyz.com>... Recipient ok
>>> DATA
354 Enter mail, end with "." on a line by itself
{The message illustrated in Figure 1C is transmitted}
>>> .
250 GAA20115 Message accepted for delivery
x1@xyz.com... Sent (GAA20115 Message accepted for delivery)
Closing connection to xyz.com
>>> QUIT
221 xyz.com closing connection

Figure 1E (Prior Art)

Error file

Host abc.com claimed to be bcd.com

Figure 2E

Example SMTP exchange as virtual computing device 200 Sendmail connects to computing device 130 Sendmail

220-xyz.com Sendmail 8.6.12/8.5 ready at Mon, 27 Nov 2000
10:22:23 -0800
220 ESMTP spoken here
220 ~ >>> EHLO bcd.com
250-xyz.com Hello bcd.com (abc.com), pleased to meet you
250-EXPN
250-SIZE
250 HELP
>>> MAIL From:<b1@bcd.com>
250 <b1@bcd.com>... Sender ok
>>> RCPT To:<x1@xyz.com>
250 <x1@xyz.com>... Recipient ok
>>> DATA
354 Enter mail, end with "." on a line by itself
{The message illustrated in Figure 2C is transmitted}
>>> .
250 GAA20115 Message accepted for delivery
x1@xyz.com... Sent (GAA20115 Message accepted for delivery)
Closing connection to xyz.com
>>> QUIT
221 xyz.com closing connection

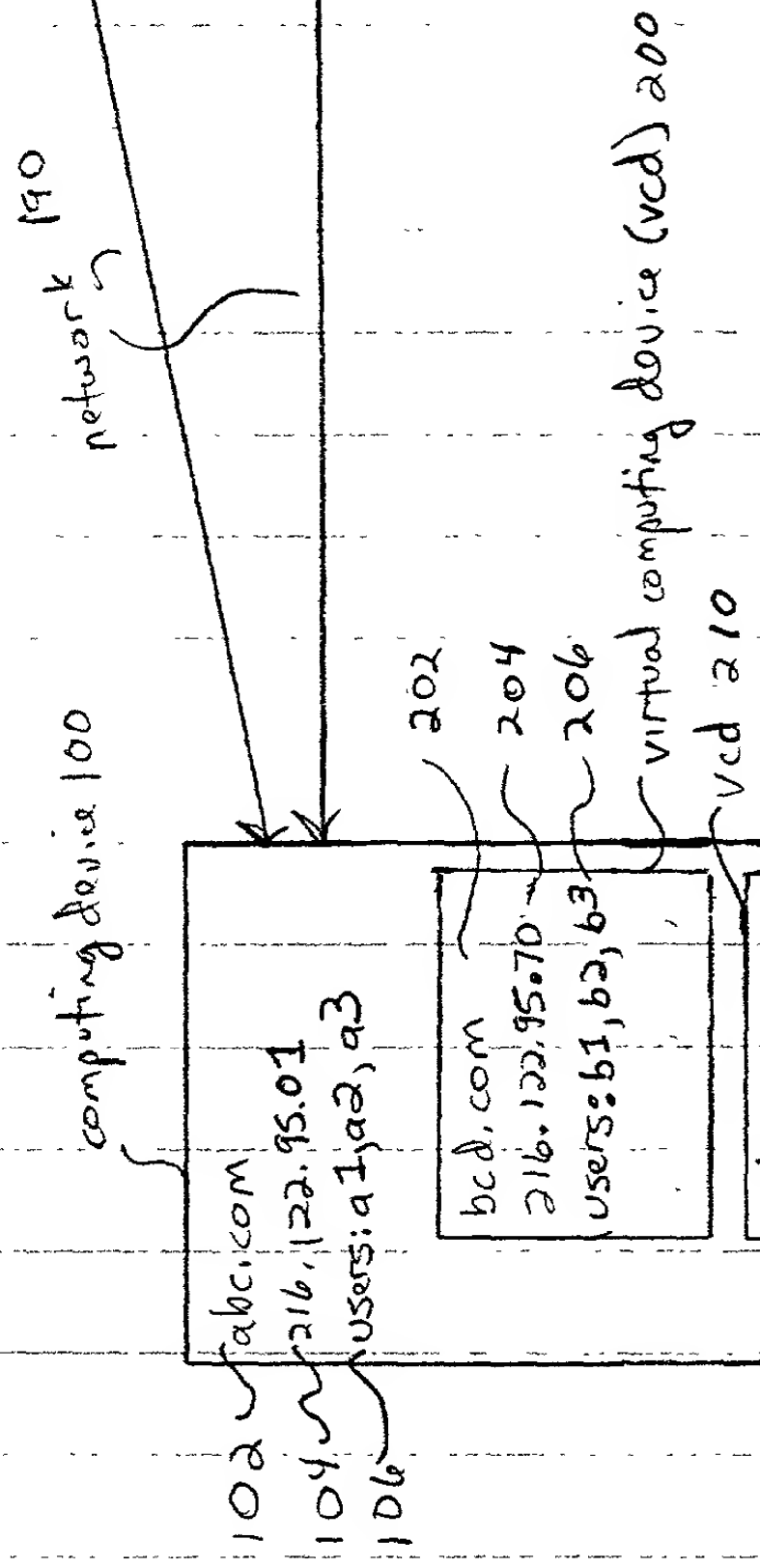
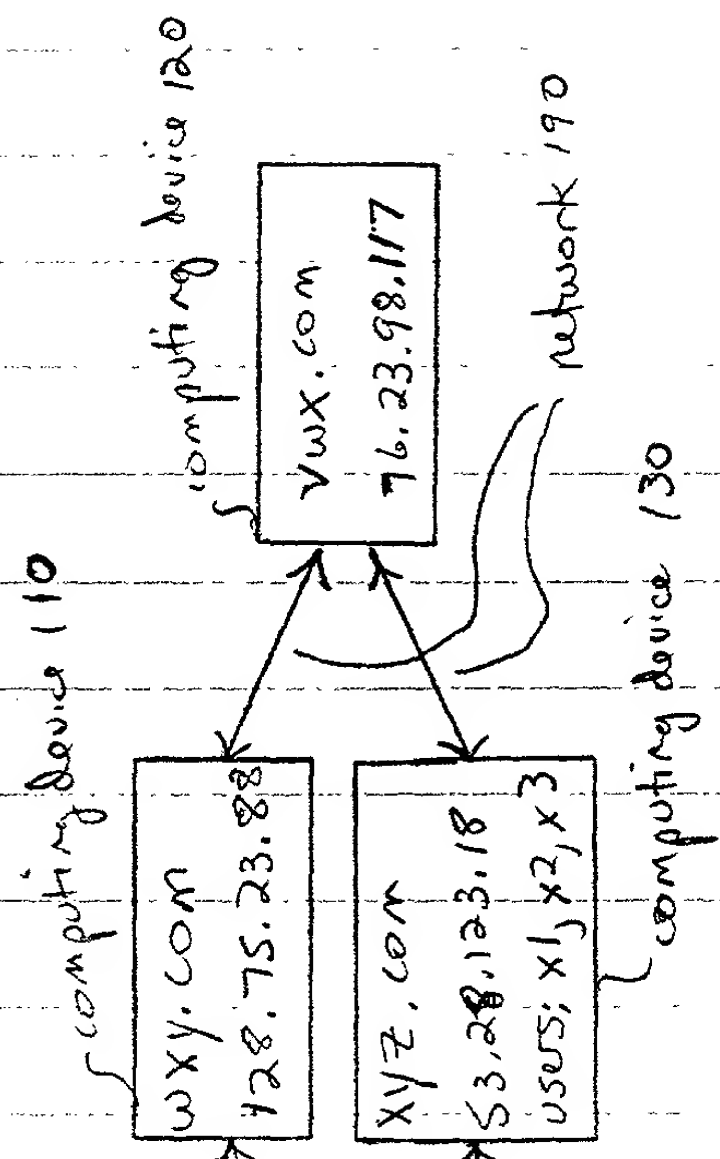


Fig. 2A

Example message generated by User B1's local mail program

Date: Mon, 27 Nov 00 10:18:52
From: "Bob Smith" <b1@bcd.com> ~ 242
To: x1@xyz.com, b2
Subject: Test Message 2

This message is a test. The end.

Figure 2B

Example message as modified by virtual computing device 200 Sendmail program

From b1@bcd.com Mon Nov 27 10:19:23 2000 ~ 245
Message-Id: <3431121623.4B0213D@bcd.com> ~ 246
Date: Mon, 27 Nov 00 10:18:52
From: "Bob Smith" <b1@bcd.com>
To: x1@xyz.com, b2
Subject: Test Message 2

This message is a test. The end.

Figure 2C

Example message as modified by remote computing device 130 Sendmail program

247 ~ From b1@bcd.com Mon Nov 27 10:19:23 2000
Received: from abc.com [216.122.95.01] by xyz.com (8.8.4/8.8.4) with ESMTP id CD0A224;
Mon, 27 Nov 2000 10:21:46
Message-Id: <3431121623.4B0213D@bcd.com>
Date: Mon, 27 Nov 00 10:18:52
From: "Bob Smith" <b1@bcd.com>
To: x1@xyz.com, b2
Subject: Test Message 2

This message is a test. The end.

Figure 2D

Example message as modified by remote computing device 130 Sendmail program
when sent by Virtual Domain Sendmail program on computing device 100

From b1@bcd.com Mon Nov 27 10:19:23 2000
347 ✓ Received: **from bcd.com [216.122.95.70]** by xyz.com (8.8.4/8.8.4) with ESMTP id CD0A224;
Mon, 27 Nov 2000 10:21:46
Message-Id: <3431121623.4B0213D@bcd.com>
Date: Mon, 27 Nov 00 10:18:52
From: "Bob Smith" <b1@bcd.com>
To: x1@xyz.com., b2
Subject: Test Message 2

This message is a test. The end.

Figure 3A

Example SMTP exchange as Virtual Domain Sendmail program on computing device 100
connects to computing device 130

220-xyz.com Sendmail 8.6.12/8.5 ready at Mon, 27 Nov 2000 10:22:23 -0800

220 ESMTP spoken here

361 ✓ >>> EHLO bcd.com

362 ✓ 250-xyz.com Hello bcd.com, pleased to meet you

250-EXPN

250-SIZE

250 HELP

>>> MAIL From:<b1@bcd.com>

250 <b1@bcd.com>... Sender ok

>>> RCPT To:<x1@xyz.com>

250 <x1@xyz.com>... Recipient ok

>>> DATA

354 Enter mail, end with "." on a line by itself

{The message illustrated in Figure 2C is transmitted}

>>> .

250 GAA20115 Message accepted for delivery

x1@xyz.com... Sent (GAA20115 Message accepted for delivery)

Closing connection to xyz.com

>>> QUIT

221 xyz.com closing connection

Figure 3B

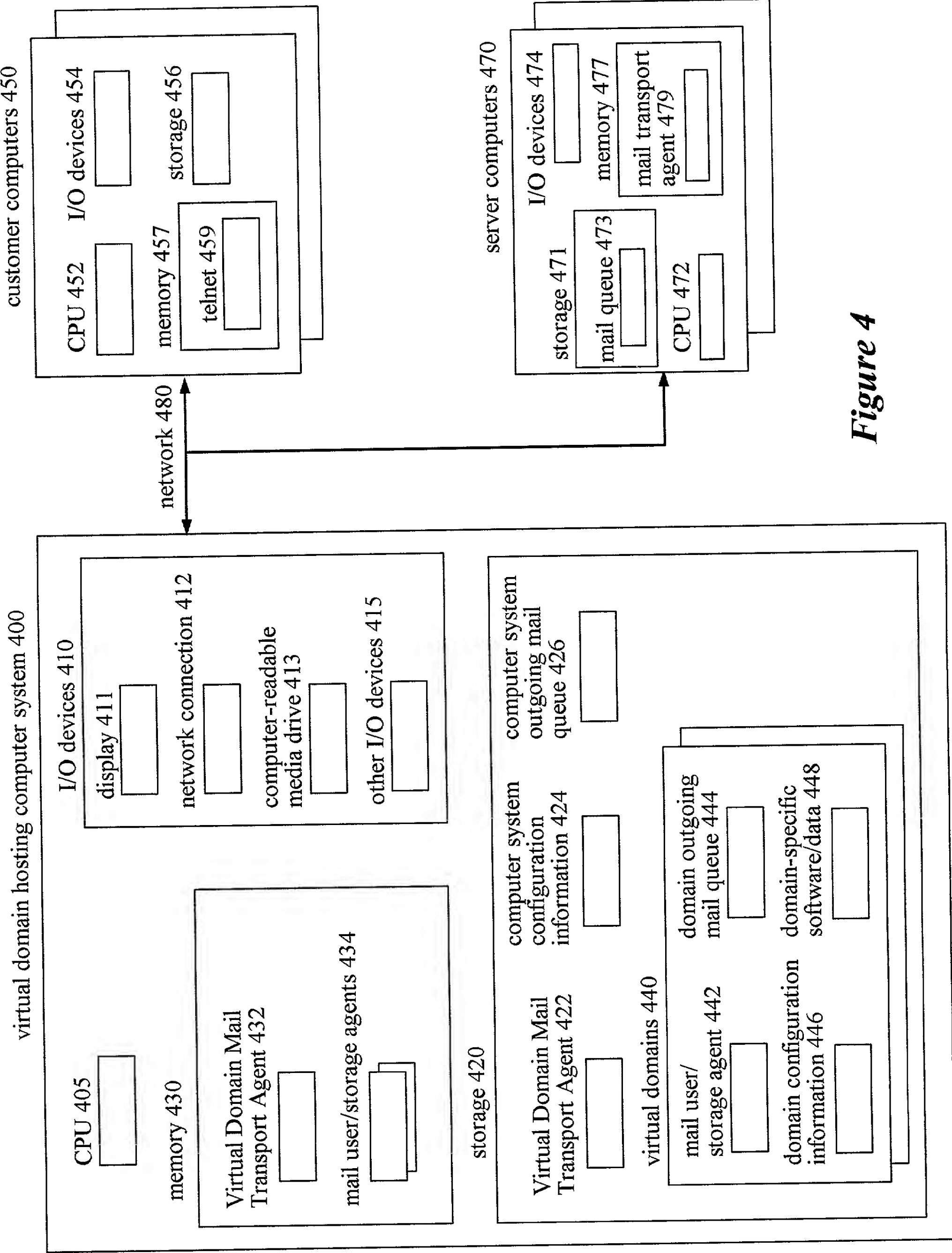


Figure 4

Fig. 5

Create/Store Message
For Virtual User
Routine 500

Receive indication
to create message 505

Receive indication of
message text, of recipients,
and optionally of subject 510

Determine virtual user
name, virtual domain
name, and current time 515

Add headers to message
based on the determined
information 520

Add message to outgoing
message queue for the
virtual machine supporting
the virtual domain name 525

530
More
messages? Yes

No
535
END

500
505
510
515
520
525
530
535

Send Messages
For Virtual User
Routine

600

Fig. 6

